Mastering Data Science:

Unleashing Insights with R Programming



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DATA SCIENCE WITH R Course Mission

SevenMentor Institute leads the way in providing cutting-edge IT Training and Skill Development across India. We have strived to establish an ideal learning atmosphere at all our training centers. We prepare our students to become dependable future professionals. Our institute aspires to promote universal access to learning for students. To achieve our mission of promoting better learning we invite all students to enroll in our Data Science with R Course. Join us today to make a fulfilling career in Data Science with R.



DATA SCIENCE WITH R STATISTICS:





Companies will use some form of Data Science with R based Application

55%

Year on Year Growth For All Data Science with R Jobs

Learn Data Science with R and

Be in Demand Always!

Data Science with R, the digital laboratory for data exploration and analysis, is where statistical modeling and data manipulation are transformed into powerful insights and predictive models. Think of it as the scientist's lab, equipped with the tools to dissect and understand data, revealing the secrets it holds. It's the driving force behind understanding customer behavior, predicting future trends, and making data-informed decisions. In the realm of data science with R, data becomes your specimen, and R is your microscope, enabling you to peer into the data's core and uncover hidden knowledge. So, prepare to don your data scientist's coat and embark on an exciting journey into the world of data science with R





Unlock the Potential of Data: Embrace the Brilliance of R



Embarking on a transformative journey into the realm of Data Science with R opens up a world of boundless possibilities, where the relentless pursuit of knowledge serves as the compass navigating you through the dynamic landscape of data exploration and analysis. Data Science with R stands out for its versatility and widespread applicability across various domains, providing practitioners with the tools to craft innovative, forward-thinking solutions that have the potential to reshape industries and drive meaningful change





Be Prepared For Every Scenario!

Gain practical Data Science with R experiences through well designed courses, latest tools and excellent teachers.



Experienced Faculty



Flexible Scheduling



Hands-On Learning



Mock Interview Sessions



Real-World Projects



Career Support



Comprehensive Curriculum



Lifetime Access



Data Science	R-Programming
 Introduction to Data Science Need for Business Analytics Data Science Life Cycle Different tools available for Data Science 	 Introduction to R Real-world uses of R Installation of R (any operating system) Installation of R-Studio (any operating system) Different types of file creation in R
Basic Concepts Of R	Control Statement in R
 Types of Variables Types of Operators Types of Datatype a. Vectors b. Arrays c. List d. Matrices e. Factors f. Data Frames 	 If-else Flow Control Loops in R √ While √ For Break Next Switch-Case
	R Data Interface
Functions in R	Reading CSV files
 Function declaration with parameters Function declaration without parameters Built in methods in R Built in packages in R 	 Reading XML files JSON files Scraping data from the Web Database connectivity in R
Statistics in R	Data Visualization of R
 Terminologies of Statistics Normal Distribution Regression Analysis Poisson Distribution Time-Series Analysis Chi-square Test Analysis 	 Pie Chart Bar graph Line Graph Scatter plot Stack Plot Box-Plot





SQL

Introduction

- What is SQL?
- Why do we need SQL?
- What is DataBase Management System? Types of DBMS
- Execution Of SQL query
- Difference Between SQL and MYSQL
- Introduction to MySQL
- Installation of MySQL server
- Download sample database
- Load sample database to work.

Basic SQL Keywords

- Basic SELECT Statement
- Limit/Offset
- OrderBy
- Distinct
- Where
- Comparison Operators
- Null
- Logical Operators
- Aggregate Operators (Count, Max, Min, Avg, Sum)
- Group By Having
- Order Of Keywords
- Wildcard Operators





JOINS

- What are Joins?
- Inner Join
- Outer Join
- Left Join
- Right Join
- Self Join
- SubQueries/NestedQueries/Inner Queries
- Triggers +Views
- Stored Procedures +Functions

DML/DDL and Normalisation

- DML:Insert
- DML:Update, Delete
- DDL:Create Table
- DDL:Alter:Add, Drop, Modify
- DDL:Drop Table, Truncate, Delete
- DCL:Data Control Language: GRANT, REVOKE



Introduction:

- Why do we need to learn Probability and Statistics?
- Descriptive Statistics
- Central Tendency(Mean/Median/Mode)
- Deviation(Standard Deviation/Variance)
- Population and Sample
- Distributions
- Why do we care about Distributions?

Distributions and Various Tests:

- What is Random Variable?
- Discrete and Continuous Random Variable
- Normal Distribution/Gaussian Distribution
- PDF and CDF of Gaussian distribution
- Uniform Distribution
- Q-Q Test
- K-S Test
- What is Sampling?
- Types of Sampling

Inferential Statistics:

- Correlation Vs Causation
- Hypothesis Testing
- Confidence Interval

- Permutation Resampling Test
- A/B Testing





Case Studies/Project:

- Case Study-1
- Case Study-2
- DataScience-1
- Machine Learning

Industry Case Studies:

- Case Study-1
- Case Study-2
- DataScience Vs DataAnalysis Vs MachineLearning Vs DeepLearning
- Introduction to Numpy, Pandas, Sci-kit Learn and Matplotlib Library
- Importing data from different Sources

Basic Terminologies and Basic Maths:

- Traditional Programming Vs Machine Learning
- Types of Machine Learning Problems
- Supervised and Unsupervised Learning
- Classification and Regression
- Overfitting and Underfitting
- What is a point and a Vector?
- Distance between 2 points, Distance between point & a line



Basic Terminologies and Basic Maths:

- Equation of a line, Equation of a Plane, Equation of a hyper plane.
- Dot product and Projection of one vector onto another.
- Basics of Differentiation
- KNN(K nearest Neighbour) Algorithm
- Geometric Intuition of KNN
- Mathematical Intuition of KNN
- Limitations of KNN
- What are Hyper-parameters?
- Hyper-parameters Tuning
- Why do we need Cross-Validation?
- Code Walkthrough on KNN

Supervised Learning Continues:

- Naive Bayes algorithm
- What is Conditional Probability
- What is Naive about Naive Bayes?
- Geometric Intuition of Naive Bayes
- Mathematical Intuition of Naive Bayes
- Limitations of Naive Bayes
- Hyperparameter Tuning in Naive Bayes
- Code Walkthrough of Naive Bayes
- Introduction to Logistic Regression
- Geometric Intuition of Logistic Regression
- Mathematical Intuition of Logistic Regression
- Why do we need sigmoid function?
- Regularisation(L1 and L2)
- Limitations of Logistic Regression
- Code Walkthrough of Logistic Regression



Supervised Learning Continues:

- Introduction to Linear Regression
- Geometric and Mathematical Intuition
- Assumptions of Linear Regression
- Limitations of Linear Regression
- Code Walkthrough of Linear Regression
- Optimisation Theory
- Convex and Non Convex Functions •
- Gradient Descent
- Stochastic Gradient Descent
- Introduction to SVM(Support Vector Machines)
- Geometric Intuition
- Mathematical Intuition
- Hard and Soft SVM
- Kernalisation in SVM(Radial Basis Function)
- Limitations of SVM
- Code Walkthrough of SVM

Decision Tree and Ensembles :

- **Decision** Tree
- Geometric Intuition of Decision Tree
- Mathematical Intuition of Decision Tree Variance and Bias
- Entropy and Gini Impurity
- Information Gain
- Limitations of Decision Tree
- Code Walkthrough of Decision Tree
- What is Ensembles
- Bagging and Boosting
- What is Ensembles?
- Bagging and Boosting

- Concept of Bootstrapping
- Introduction to Random Forest
- Geometric Intuition of Random Forest
- Why Random Forest is so famous?
- Code Walkthrough of Random Forest
- Performance Metric and Different



Situations in Supervised Learning :

- Accuracy
- Why Accuracy as a metric will fail in most of the real world cases?
- Precision and Recall
- F1 Score
- Confusion Matrix
- Log-loss
- ROC-AUC Curve
- RMSE(Root Mean Square Error)
- R2(Coefficient of Determinant)
- MAD(Median Absolute Deviation)
- How to Handle Outliers in the data?
- How to deal with the imbalance data?
- How to handle categorial data?
- Scaling of Features
- Curse of Dimensionality

Unsupervised Learning and Dimension Reduction:

- What is Unsupervised Learning?
- What is Clustering?
- K-Means Clustering
- Hierarchal Clustering
- Why Dimensions Reduction?
- PCA(Principle Component Analysis)



Machine Learning Project :

- Business Problem
- Contraints
- Data Collection
- Formulate Business Problem to Machine Learning Problem
- Data Cleaning
- Data Preprocessing
- EDA(Exploratory Data Analysis)
- Modelling
- Evaluating the Performance of the models
- Retrain if necessary
- Deployment
- Artificial Intelligence With Deep Learning

History of Neural Networks:

- Who invented Neural Network?
- What is the intuition of a Neural Network?
- What is a perceptron?
- Connecting Logistic Regression, Linear Regression with Perceptron
- Multi Layer Perceptron
- Training of a Perceptron
- MLP and Backpropogation)
- Notation
- Training a MLP:Chain Rule
- Training a MLP:Memoization
- Back propogation
- Activation Functions
- Sigmoid
- Tanh
- RELU
- Vanishing gradient



Deep Multi LayerPerceptrons :

- Dropout and Regularisation
- Batch Normalisation
- Batch SGD with Momentum
- Adam
- Softmax and Cross-Entropy
- How to train Deep MLP?
- Tensorflow and Keras Overview
- Install Tensorflow
- Softmax Classifier on MNIST data
- Code Walkthrough of MLP
- Hyperparameter Tuning in Keras

Introduction to CNN :

Introduction to CNN(Convolution Neural Network)

- What is Convolution?
- (Convolution:Padding and Strides
- Convolution over RGB images
- Max Pooling
- CNN Training

Introduction to CNN Continues :

- AlexNet
- VGGNet
- Residual Network
- Inception Network
- What is Transfer Learning?
- Code Walkthrough of CNN

Introduction to RNN:

- Why RNN(Recurrent Neural Network)?
- Training RNN
- Types of RNN
- Need of LSTM
- |. STM(Long Short Term Memory)
- Deep RNN
- Bidirectional RNN
- Code Walkthrough of RNN





Introduction to NLP :

- What is NLP(Natural Language Processing)?
- BOW(Bag of Words)
- Text Preprocessing: Stemming and Lemmatisation
- Stop Word Removal
- Tokenisation
- Unigram, Bigram, Ngrams
- TF-IDF
- Weighted TF-IDF
- Word2Vec(W2V)
- Code Walkthrough of NLP Techniques

Deep Learning Project :

- Business Problem Contraints
- Data Collection
- Formulate Business Problem to Deep Learning Problem
- Data Cleaning
- Data Preprocessing
- EDA (Exploratory Data Analysis)
- Feature Extraction
- Modelling
- Evaluating the Performance of the models
- Retrain if necessary



Get Skills To Fulfill Every Role:

Every student at **SevenMentor** gets personalized guidance, Mentorship, and ample opportunities to address individual questions and concerns. All our sessions are designed to be engaging, interactive, and tailored to your learning pace, ensuring you grasp each concept with clarity.

Deepali Shinkar

She is a versatile professional with strong background in both Python data science and Django web development. Programming language expert with 14 years teaching/training experience in computer science nd information technology. My expertise spans a wide range of data science domains, including machine learning, data analysis, and statistical modeling. I have a deep understanding of Django's architecture and best practices, enabling me to create future-rich and secure web solutions.



Get Skills To Fulfill Every Role:

Our Data Science with R Courses are designed for a wide range of people looking for skills and opportunities across all major IT sectors



Hands-On Projects: Gain practical experience by working on realworld projects, building a robust portfolio that will impress potential employers.



Flexibility: Our flexible schedule options allow you to learn at your own pace, making it perfect for both beginners and experienced developers looking to upskill.



Career Support: We're dedicated to your success! Benefit from career guidance, resume building, interview prep, and job placement



Community: Join a vibrant community of like-minded learners, where you can collaborate, share ideas, and network with peers.

Our Students are at reputed Tech Companies





DATA SCIENCE WITH R JOBS ARE ALSO VERY STABLE!

The demand for **Data Science with R** professionals is growing rapidly, so there is a lot of job security in this field. This can be a great motivator for people who are looking for a stable career.





BOOST YOUR CAREER TO NEW HEIGHTS:

The global Data Science with R job market is expected to grow by 44% from 2021 to 2030, creating 3.5 million new jobs.

In India it is expected that 309,000 new Data Science with R jobs will be available by 2030, accounting for 9% of the global demand. The average salary for an Data Science with R professional in India is approximately Rs. 08 to Rs. 10 Lakhs per annum.



Affordable Training without Compromise:

SevenMentor understands that investing in your education is a significant decision. Therefore, we provide the most affordable fee structure for our Data Science with R course. We also offer flexible fee payment options and have discounts and offers available from time to time. We also accept all modes of payments such as cash, cards and UPI.

Before enrolling you can also schedule one demo training session at no cost. You can contact us for the demo session or detailed fee structure._____

HOW TO START YOUR CAREER IN DATA SCIENCE WITH R

- Enroll at SevenMentor Institute
- Get hands-on training from Experienced Teachers
- Receive Industry-recognized Data Science with R
- Certification
- Work for leading MNCs through our on-campus interviews





WE ARE THERE FOR YOU

If you are interested in learning more about Data Science with R training, please contact us. Our team would be happy to answer any questions you have and help you find the right training for you.



